WHAT IS CLAIMED IS:

1. A Group III nitride substrate comprising:

a substrate;

a semiconductor layer formed on the substrate; and

Group III nitride crystals formed on the semiconductor layer,

wherein the semiconductor layer is formed of a semiconductor expressed by a composition formula of $Al_uGa_vIn_{1-u-v}N$ (wherein $0 \leq u \leq 1$ and $0 \leq v \leq 1$),

a surface of the semiconductor layer is a plane that is sloped in one direction and includes steps of (0001) planes arranged step-wise,

the plane that is sloped in one direction and the (0001) planes form an angle of at least 0.05° therebetween, and

the Group III nitride crystals formed on the semiconductor layer have variations in in-plane carrier concentration, the variations being within a range of one fifth to five times a carrier concentration mean value.

2. The Group III nitride substrate according to claim 1, wherein the Group III nitride crystals are formed through liquid phase epitaxy.

3. The Group III nitride substrate according to claim 1 or 2, wherein the plane sloped in one direction and the (0001) planes form an angle of 0.05° to 0.5° therebetween.

4. The Group III nitride substrate according to any one of claims 2 or 3, wherein surfaces of the Group III nitride crystals and the (0001) planes form an angle of 0.05° to 5° therebetween.

5. The Group III nitride substrate according to any one of claims 1 to 4, wherein the Group III nitride crystals are gallium nitride.

6. A method of manufacturing a Group III nitride substrate, the method comprising:

(i) forming a semiconductor layer on a substrate, the semiconductor layer being formed of a semiconductor expressed by a composition formula of $Al_uGa_vIn_{1-u-v}N$ (wherein $0 \leq u \leq 1$ and $0 \leq v \leq 1$) and having a (0001) plane present at its surface;

(ii) processing the surface of the semiconductor layer so that the surface becomes a plane sloped with respect to the (0001) plane of the semiconductor layer; and

(iii) bringing the surface of the semiconductor layer into contact with a melt containing a solvent and at least one Group III element selected from gallium, aluminum, and indium, in an atmosphere containing nitrogen, to make the at least one Group III element and the nitrogen react with each other to grow Group III nitride crystals on the semiconductor layer.

7. The method of manufacturing a Group III nitride substrate according to claim 6, wherein the at least one Group III element is gallium, and the Group III nitride crystals are gallium nitride.

8. The method of manufacturing a Group III nitride substrate according to claim 6 or 7, wherein the Group III nitride crystals are grown on the semiconductor layer at a growth rate of at least 20 μm/hr.

9. The method of manufacturing a Group III nitride substrate according to any one of claims 6 to 8, wherein the Group III nitride crystals that have grown on the semiconductor layer have variations in in-plane carrier concentration, the variations being within a range of one fifth to five times a carrier concentration mean value.

10. The method of manufacturing a Group III nitride substrate according to any one of claims 6 to 9, wherein the atmosphere containing nitrogen is a pressure atmosphere.

11. The method of manufacturing a Group III nitride substrate according to any one of claims 6 to 10, wherein the solvent is alkali metal.

12. The method of manufacturing a Group III nitride substrate according to any one of claims 6 to 11, wherein the solvent contains alkali metal and alkaline-earth metal.

13. The method of manufacturing a Group III nitride substrate according to claim 11 or 12, wherein the alkali metal is at least one selected from a group consisting of sodium, lithium, and potassium.

14. The method of manufacturing a Group III nitride substrate according to any one of claims 6 to 13, wherein in the process (ii), the surface of the semiconductor layer is processed by polishing.

15. The method of manufacturing a Group III nitride substrate according to any one of claims 6 to 14, wherein the processes (i) and (ii) are carried out simultaneously.

16. The method of manufacturing a Group III nitride substrate according to claim 15, wherein the processes (i) and (ii) are carried out using temperature gradient provided during crystal growth.

17. The method of manufacturing a Group III nitride substrate according to any one of claims 6 to 16, wherein the substrate is made of sapphire.

18. A semiconductor device comprising:

a substrate; and

a semiconductor element formed on the substrate,

wherein the substrate is a Group III nitride substrate manufactured by a manufacturing method according to any one of claims 6 to 17.

19. The semiconductor device according to claim 18, wherein the semiconductor element is a laser diode or a light emitting diode.